IN THE SPECIFICATION

Please amend the paragraphs of the specification as follows:

One page 4, please replace the paragraph starting on line 5 with the following paragraph:

Many ~~communications~~ communication systems use forward error correction techniques and therefore, would benefit from the use of turbo coding. For example, turbo codes could improve the performance of wireless satellite links, in which the limited downlink transmit power of the satellite necessitates receiver systems that can operate at low E_b/N_0 levels.

On page 6, please replace the paragraph starting on line 13 with the following paragraph:

As illustrated in FIG. 1, a wireless communication network 10 generally includes a plurality of mobile stations (also called subscriber units or user equipment) ~~12a-12d~~ 12A-12D, a plurality of base stations (also called base station transceivers (BTSs) or Node B) ~~14a-14c~~ 14A-14C, a base station controller (BSC) (also called radio network controller or packet control function 16), a mobile switching center (MSC) or switch 18, a packet data serving node (PDSN) or internetworking function (IWF) 20, a public switched telephone network (PSTN) 22 (typically a telephone company), and an Internet Protocol (IP) network 24 (typically the Internet). For purposes of simplicity, four mobile stations ~~12a-12d~~ 12A-12D, three base stations ~~14a-14c~~ 14A-14C, one BSC 16, one MSC 18, and one PDSN 20 are shown. It would be understood by those skilled in the art that there could be any number of mobile stations 12, base stations 14, BSCs 16, MSCs 18, and PDSNs 20.

On page 6, please replace the paragraph starting on line 26 with the following paragraph:

In one embodiment the wireless communication network 10 is a packet data services network. The mobile stations ~~12a-12d~~ 12A-12D may be any of a number of different types of wireless communication device such as a portable phone, a cellular telephone that is connected to a laptop computer running IP-based, Web-browser applications, a cellular telephone with associated hands-free car kits, a personal data assistant (PDA) running IP-based, Web-browser applications, a wireless communication module incorporated into a portable computer, or a fixed

location communication module such as might be found in a wireless local loop or meter reading system. In the most general embodiment, mobile stations may be any type of communication unit.

On page 7, please replace the paragraph starting on line 3 with the following paragraph:

The mobile stations ~~12a-12d~~ 12A-12D may be configured to perform one or more wireless packet data protocols such as described in, for example, the EIA/TIA/IS-707 standard. In a particular embodiment, the mobile stations ~~12a-12d~~ 12A-12D generate IP packets destined for the IP network 24 and encapsulate the IP packets into frames using a point-to-point protocol (PPP).

On page 7, please replace the paragraph starting on line 8 with the following paragraph:

In one embodiment the IP network 24 is coupled to the PDSN 20, the PDSN 20 is coupled to the MSC 18, the MSC 18 is coupled to the BSC 16 and the PSTN 22, and the BSC 16 is coupled to the base stations ~~14a-14c~~ 14A-14C via wirelines configured for transmission of voice and/or data packets in accordance with any of several known protocols including, e.g., E1, T1, Asynchronous Transfer Mode (ATM), IP, Frame Relay, HDSL, ADSL, or xDSL. In an alternate embodiment, the BSC 16 is coupled directly to the PDSN 20, and the MSC 18 is not coupled to the PDSN 20. In another embodiment of the invention, the mobile stations 12a-12d communicate with the base stations ~~14a-14c~~ 14A-14C over an RF interface defined in the 3rd Generation Partnership Project 2 ~~"3GPP2",~~ "3GPP2," "Physical Layer Standard for cdma2000 Spread Spectrum Systems," 3GPP2 Document No. C.P0002-A, TIA PN-4694, to be published as TIA/EIA/IS-2000-2-A, (Draft, edit version 30) (Nov. 19, 1999), which is fully incorporated herein by reference.

On page 7, please replace the paragraph starting on line 22 with the following paragraph:

During typical operation of the wireless communication network 10, the base stations ~~14a-14c~~ 14A-14C receive and demodulate sets of reverse-link signals from various mobile stations ~~12a-12d~~ 12A-12D engaged in telephone calls, Web browsing, or other data communications. Each reverse-link signal received by a given base station ~~14a-14c~~ 14A-14C is

processed within that base station ~~14a-14c~~ 14A-14C. Each base station ~~14a-14c~~ 14A-14C may communicate with a plurality of mobile stations ~~12a-12d~~ 12A-12D by modulating and transmitting sets of forward-link signals to the mobile stations ~~12a-12d~~ 12A-12D. For example, as shown in FIG. 1, the base station [[14a]] 14A communicates with first and second mobile stations ~~12a, 12b~~ 12A, 12B simultaneously, and the base station [[14c]] 14C communicates with third and fourth mobile stations ~~12c, 12d~~ 12C, 12D simultaneously. The resulting packets are forwarded to the BSC 16, which provides call resource allocation and mobility management functionality including the orchestration of soft handoffs of a call for a particular mobile station ~~12a-12d~~ 12A-12D from one base station ~~14a-14c~~ 14A-14C to another base station ~~14a-14c~~ 14A-14C. For example, a mobile station [[12c]] 12C is communicating with two base stations ~~14b, 14c~~ 14B, 14C simultaneously. Eventually, when the mobile station [[12c]] 12C moves far enough away from one of the base stations [[14c]] 14C, the call will be handed off to the other base station [[14b]] 14B.

On page 10, please replace the paragraph starting on line 26 with the following paragraph:

In an HDR system, the rates at which the subpackets are to be transmitted from a base station to a remote station are determined by a rate control algorithm performed by the remote station and a scheduling algorithm at the base station. This method to modify the data transmission rate is referred to as an Automatic Repeat Request (ARQ) procedure. It should be noted that the system throughput is determined by the rate at which data payload is actually received, which differs from the bit rate of the transmitted subpackets.

On page 12, please replace the paragraph starting after Table 1 with the following paragraph:

In an HDR system, code symbols that are transmitted in subpackets at lower data rates are code-extensions or repetitions of the code symbols that are transmitted at certain higher rates. In many cases, the code symbols transmitted in a given subpacket are shifted repetitions of the code symbols transmitted in the earlier slots of the packet. The lower data rates require a lower SINR

for a given low probability of packet error. Hence, if the remote station determines that channel conditions are not favorable, the remote station will transmit a DRC message requesting a low data rate packet, which comprises multiple subpackets. The base station will then transmit multi-slot packets in accordance with parameters stored in the scheduling unit, an example of which is presented in Table 1.

On page 14, please replace the paragraph starting on line 11 with the following paragraph:

Transmissions of the subpackets to the remote station are sent in a staggered pattern so that transmission gaps occur between the subpackets. In one embodiment, the subpackets are transmitted periodically at every 4^{th} slot. The delay between subpackets provides an opportunity for the target remote station to decode the subpacket before the arrival of the next subpacket. If the remote station is able to decode the subpacket before the arrival of the next subpacket and to verify the Cyclic Redundancy Check (CRC) bits of the decoded result before the arrival of the next subpacket, the remote station can transmit an acknowledgment signal, hereinafter referred to as a FAST_ACK (acknowledgement) signal, to the base station. If the base station can demodulate and interpret the FAST_ACK signal sufficiently in advance of the next scheduled subpacket transmission, the base station need not send the remaining scheduled subpacket transmissions. The base station may then transmit a new data packet to the same remote station or to another remote station during the slot period that had been designated for the cancelled subpackets. It should be noted that the FAST_ACK signal herein described is separate and distinct from the ACK messages that are exchanged between the higher layer protocols, such as the Radio Link Protocol (RLP) and the Transmission Control Protocol (TCP).

On page 22, please replace the paragraph starting on line 17 with the following paragraph:

In one embodiment, the output of a turbo encoder operating at rate 1/5 can be reordered by the method described in FIG. 4, wherein all the data and tail output symbols are demultiplexed into five sequences, denoted U, V_0, V_1, V'_0 and V'_1. At step 400, the output symbols are

sequentially distributed from the U sequence to the V'_1 sequence, wherein the first output symbol is placed in the U sequence, the second output symbol is placed in the V_0 sequence, the third output symbol is placed in the V_1 sequence, the fourth output symbol is placed in the V'_0 sequence, and the fifth output symbol is placed in the V'_1 sequence. The next, subsequent output symbols repeat this pattern. At step 402, the U, V_0, V_1, V'_0 and V'_1 sequences are rearranged according to the order U, V_0, V'_0, V_1, and V'_1. It should be noted that this order can altered as long as the U sequence remains first, and the V_1 and ~~V'1sequences~~ V'1 sequences are placed at the end of the order.

On page 23, please replace the paragraph starting on line 21 with the following paragraph:

[[Fig.]] FIG. 5 is a flow chart for a series of permutation steps in accordance with one embodiment. At step 500, sequences U, V_0, V'_0, V_1, and V'_1 are written into rectangular arrays of K rows and M columns to form a first input block U, a second block V_0/V'_0, and a third input block V_1/V'_1. The symbols are written into the blocks by rows, wherein symbols are placed starting from the top row and are placed from left to right. The columns of the blocks are labeled by the index j, where j = 0, . . ., M – 1 and column 0 is the left-most column.

On page 25, please replace the paragraph starting on line 10 with the following paragraph:

[[Fig.]] FIG. 6 is a flow chart for a series of permutation steps in accordance with one embodiment. At step 600, sequences U, V_0, V'_0, V_1, and V'_1 are written into rectangular arrays of K rows and M columns to form a first input block U, a second block V_0/V'_0, and a third input block V_1/V'_1. The symbols are written into the blocks by rows, wherein symbols are written starting from the top row and are written from left to right. The columns of the blocks are labeled by the index j, where j = 0, . . ., M – 1 and column 0 is the left-most column.

On page 25, please replace the paragraph starting on line 21 with the following paragraph:

At step 604, a block swap takes place in accordance with the type of modulation scheme that is to follow the channel interleaver. In an embodiment wherein the 8-PSK modulation scheme will be used in an HDR system, ~~FIG. 7(a) and 7(b)~~ FIGs. 7A and 7B are tables that shows the placement of certain groups of bits that can be exchanged with other bits, wherein the one-to-one swap is identified by a number and an accent mark. For example, bits in Group 1 will be exchanged with bits in Group 1'. FIG. [[7(a)]] 7A is an optimal swapping pattern for an 8-PSK modulation scheme and FIG. [[7(b)]] 7B is an optimal swapping pattern for a 16-QAM modulation scheme. The optimality of the swapping patterns herein disclosed is determined through empirical observation.

On page 26, please replace the paragraph starting on line 16 with the following paragraph:

In one embodiment, an 8-PSK modulation scheme is used to modulate the signal. [[Fig.]] FIG. 8 illustrates a signal constellation for the 8-PSK modulation. Three successive channel interleaver output symbols, $x(3i)$, $x(3i+1)$, and $x(3i+2)$, $i = 0, \ldots,$ M-1, are mapped to the signal constellation point $(m_I(i), m_Q(i))$. Table 4 specifies the mapping of the interleaved symbols to the modulation symbols.

On page 27, please replace the paragraph starting on line 1 with the following paragraph:

From the symbol mapping in [[Fig.]] FIG. 8, it can be observed that the most significant bit $\mathbf{s_2}$ is resilient to errors on the quadrature channel, i.e., a positive modulation symbol value would be interpreted as a "0" with a high degree of certainty whereas a negative modulation symbol value would be interpreted as a "1" with a high degree of certainty. The same would be true for the bit $\mathbf{s_1}$ and the in-phase channel. However, the same would not be true for the least significant bit $\mathbf{s_0}$. The embodiments described above distributes the protected bits and the unprotected bits uniformly along the packet.

On page 27, please replace the paragraph starting on line 10 with the following paragraph:

In another embodiment, a 16-QAM is used to modulate the signal. [[Fig.]] FIG. 9 illustrates a signal constellation for the 16-QAM modulation scheme. Four successive channel interleaver output symbols, $x(4i)$, $x(4i+1)$, $x(4i+2)$, and $x(4i+3)$, $i = 0, \ldots, M-1$, are mapped to the signal constellation point $(m_I(i), m_Q(i))$. Table 5 specifies the mapping of the interleaved symbols to the modulation symbols.

On page 30, please replace the paragraph starting on line 1 with the following paragraph:

The steps of a method or algorithm described in connection with the embodiments disclosed herein may be embodied directly in hardware, in a software module executed by a processor, or in a combination of the two. A software module may reside in RAM memory, flash memory, ROM memory, EPROM memory, EEPROM memory, registers, hard disk, a removable disk, a CD-ROM, or any other form of storage medium known in the art. An exemplary storage medium is coupled to the processor such that the processor can read information from, and write information to, the storage medium. In the alternative, the storage medium may be integral to the processor. The processor and the storage medium may reside in an ASIC. The ASIC may reside in a user terminal. In the alternative, the processor and the storage medium may reside as discrete components in a user terminal.